

B. AMENDMENTS TO THE CLAIMS

1. (currently amended) A golf ball comprising:

a solid center having a deflection, under an applied static load of 200 lb., of between about 0.090 inches and about 0.150 inches;

at least one intermediate layer comprised of thermoplastic material, the at least one intermediate layer comprises a co- or ter-polymer of ethylene and acrylic acid, wherein 100% of the acid groups are neutralized with metal ions, the co- or ter-polymer including a level of Magnesium Oleate; and

a cover layer comprising an ionomer or ionomer blend and having a Shore D hardness, measured on the curved surface of the golf ball, of greater than about 70;

wherein, the golf ball, when struck by a driver club at a clubhead velocity of about 160 feet-per-second, has an initial velocity off the clubhead of greater than ~~about~~ 240 feet-per-second.

2. (currently amended) The golf ball of claim 1, where the golf ball has a coefficient of restitution of greater than 0.815 ~~about 0.812~~ at a test velocity of 150 feet-per-second.

Claims 3 and 4 are canceled.

5. (original) The golf ball of claim 1, wherein the at least one intermediate layer(s) has a Shore D hardness as measured on the curved outer surface of the at least one intermediate layer, of between about 55 and about 62.

Claims 6 and 7 are canceled.

8. (currently amended) The golf ball of claim 1, wherein the ~~at least one intermediate layer comprises a ter-polymer of the intermediate layer is comprised of~~ ethylene, acrylic acid, and n-butyl acrylate, ~~wherein about 100% of the acid groups are neutralized with metal ions~~.

9. (canceled)

10. (currently amended) The golf ball of claim 1, wherein the ball has a diameter of less than ~~about~~ 1.680 in.

11. (currently amended). The golf ball of claim 1, wherein the core, the at least one intermediate layer, and the cover layer have approximately the same specific gravity, such that when the ball is rotated in a solution of salt water of sufficient density to support the ball, the ball exhibits no single preferred orientation.

12. (previously presented) The golf ball of claim 11, wherein the specific gravity of the core, the at least one intermediate layer, and the cover layer is between about 1.118 and about 1.132.

13. (currently amended) The golf ball of claim 1, wherein the ball has a diameter within the range of 1.62 to 1.65 inches of about 1.650 in.

Claims 14-17 are canceled.

18. (currently amended) The golf ball of claim 1, wherein the core is adjusted to a desired specific gravity through use of one or more high density fillers ~~an inert filler~~.

19. (currently amended) The golf ball of claim 18, wherein the high density inert filler is tungsten chosen from the groups consisting of organic and inorganic materials.

Claims 20-27 are canceled.

28. (currently amended) A golf ball comprising:
a core comprising a high cis-content polybutadiene rubber, the rubber being synthesized using a neodymium catalyst;
a mantle comprising a thermoplastic material, co- or ter- polymer of ethylene and acrylic acid, wherein 100% of the acid groups are neutralized with metal ions; and

a cover layer comprising an ionomer and having a Shore D hardness, measured on the curved surface of the golf ball, of greater than about 70;

wherein the golf ball exhibits a coefficient of restitution of greater than about 0.785 0.77 at a test velocity of 175 feet-per-second.

29. (previously presented) The golf ball of claim 28, wherein the golf ball, when struck by a driver club at a clubhead velocity of about 160 ft/s, has an initial velocity off a clubhead of greater than about 238 ft/s.

30. (currently amended) The golf ball of claim 28, wherein the polybutadiene rubber has a cis-1,4 content of at least 94 percent ~~comprise a high cis-1,4 content~~ polybutadiene and the core further comprises about 20 to about 28 parts by weight of a co-crosslinking agent comprised primarily of a zinc salt of an unsaturated acrylate, about 3 to about 5 parts by weight of a metal oxide activator, and about 0.8 to about 1.5 parts per hundred resin of a free radical initiator.

31. (canceled)

32. (original) The golf ball of claim 28, wherein the thermoplastic material comprises about 70 to about 80% ethylene, about 8 to about 10.5% acrylic acid and about 12 to about 20% n-butyl acrylate.

33. (currently amended) The golf ball of claim 28, wherein the core, the mantle, and the cover layer have approximately the same specific gravity, such that when the ball is rotated in a solution of salt water of sufficient density to support the ball, the ball exhibits no single preferred orientation.

34. (previously amended) The golf ball of claim 33, wherein the specific gravity of the core, the mantle, and the cover layer is between about 1.118 and about 1.132.

35. (canceled)

36. (currently amended) The golf ball of claim 28, wherein the ball has a diameter of less than ~~about~~ 1.680 in.

37. (currently amended) The golf ball of claim 28, wherein the ball has a diameter within the range of 1.62 to 1.65 inches of about 1.650 in.

Claims 38-40 are canceled.

41. (currently amended) The golf ball of claim 28, wherein the core is adjusted to a desired specific gravity through use of one or more high density fillers ~~an inert filler~~.

42. (currently amended) The golf ball of claim 41, wherein the high density inert filler is ~~tungsten chosen from the groups consisting of metals, metal oxides, metal sulfates, and combinations thereof.~~

Claims 43- 56 are canceled.

57. (new) The golf ball of claim 1, wherein the level of Magnesium Oleate is greater than 5 phr of the base resin of the co- or ter-polymer.

58. (new) The golf ball of claim 1, wherein the solid center is comprised of a high cis-content polybutadiene rubber, and wherein the rubber is synthesized using a neodymium catalyst.

59. (new) The golf ball of claim 1, wherein the solid center is comprised of a polybutadiene rubber having a cis-1,4 content greater than 94 percent.

60. (new) The golf ball of claim 1, wherein the golf ball has a weight equal to or greater than 47.0 grams and less than 48.5 grams.

61. (new) The golf ball of claim 60, wherein the golf ball has a weight equal to or greater than 48.0 grams and less than 48.5 grams.

62. (new) The golf ball of claim 28, wherein the co- or ter-polymer includes an amount of Magnesium Oleate.

63. (new) The golf ball of claim 62, wherein the amount of Magnesium Oleate is greater than 5 phr of the base resin of the co- or ter-polymer.

64. (new) The golf ball of claim 28, wherein the solid center is comprised of a polybutadiene rubber having a cis-1,4 content greater than 94 percent.

65. (new) The golf ball of claim 28, wherein the golf ball has a weight equal to or greater than 47.0 grams and less than 48.5 grams.

66. (new) The golf ball of claim 65, wherein the golf ball has a weight equal to or greater than 48.0 grams and less than 48.5 grams.

67. (new) The golf ball of claim 28, wherein the core has a deflection, under an applied static load of 200 lb., of between about 0.090 inches and about 0.150 inches.

68. (new) The golf ball of claim 28, wherein the golf ball exhibits a coefficient of restitution of greater than about 0.815 at a test velocity of 150 feet-per-second